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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,870	08/05/2003	Robert Francis Squibbs	B-5189 621138-2	8940

7590 08/10/2006

HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
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EXAMINER
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PATEL, KAUSHIKKUMAR M

ART UNIT	PAPER NUMBER
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2188

DATE MAILED: 08/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/635,870	<b>Applicant(s)</b> SQUIBBS, ROBERT FRANCIS	
	<b>Examiner</b> Kaushikkumar Patel	<b>Art Unit</b> 2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,7-9 and 11-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,7,8,11-15,17 and 18 is/are rejected.
- 7) ☒ Claim(s) 9,16 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/28.2005</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This office action is in response to applicant's communication filed June 6, 2006 in response to PTO office action mailed February 7, 2006. The applicant's remarks and amendments to claims were considered with the results that follow.
2. In response to the last office action, claims 1, 3-5, 9, and 11 have been amended. Claims 2, 6, 10 and 20 have been canceled. No new claims have been added. As a result, claims 1, 3-5, 7-9 and 11-19 remain pending in this application.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1 and 11 have been considered but are moot in view of the new ground(s) of rejection.

### ***Allowable Subject Matter***

4. The indicated allowability of claims 8 and 18 is withdrawn in view of the newly discovered reference(s). Rejections based on the newly cited reference(s) follow.

### ***Claim Objections***

5. Claims 1, 4, 7, 11, 14-15 and 17 are objected to because of the following informalities:

Claim 1 recites "storing it" and "store it" in lines 6 and 10. It should be "storing the item" and "store the item".

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Claim 4 recites "or, if not yet accessed, since the item...cache" in line 4. It should properly be replaced with "or, if the item is not accessed since the item...cache".

Claims 7 and 17, recites "selectively removing whole portions of the item" in lines 6 and 7 respectively, it should be "selectively removing portions of the item".

Claim 11 recites, "store it" in line 10. It should be "store the item".

Claim 14 recites, "lapsed-time means," in lines 2 and 6; it should read, "lapsed-time counting means".

Claim 15, recites "cache-space means" in lines 2 and 5, it should read "free cache-space determining means".

Claim 17 recites "item in step (b)" in line 3. The claim 11 does not indicate any step (b) in the claim.

Also applicant used "un-graded", "un-degraded", "version" and "form" terms in the claims. Applicant's cooperation is requested to change the terms and use same terms to describe the same entity throughout the claims.

Applicant is advised that should claim 11 found allowable, claim 12 will be objected to under 37 C.F.R. 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in the content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

7. Claims 3 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3 and 13 recites the limitation "predetermined condition is at least partially based on the probability of usage of the item as assessed from a determination of the probability of usage of that or the other items" in lines 2-4. It is not clear how the probability of the usage is assessed from the determination of the probability of the usage of the item?

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

9. Claim 1 recites the limitation "the amount of the cache space" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitations "the probability of usage", "the item", "the progress" and "said space" in lines 3 and 5. There is insufficient antecedent basis for these limitations in the claim.

Claim 4 recites the limitation "the time elapsed" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "the amount of available cache space" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitations "the sample rate", "the number of bits", "the resolution" and "the format" in lines 5 and 8-9. There is insufficient antecedent basis for these limitations in the claim.

Claim 8 recites the limitation "in cache" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitations "an item", "a user", "a mobile device", "a cache", "a degraded form" and "un-degraded version". There is insufficient antecedent basis for these limitations in the claim.

Claim 9 recites "this version of the item"; it is not clear what applicant meant by "this version".

Claims 11-20 also contains similar limitations in the claims and applicant's cooperation is requested in correcting these errors. Claims 11-20 also rejected under 35 U.S.C. 112 second paragraph based on similar rationales applied to claims 1, 3-5 and 7-9 above.

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 4-5, 8, 11-12, 14-15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathews et al. (US 2003/0060973 A1) (or Hakala et al. (US 6,452,544 B1)) and further in view of Singh et al. (US 6,324,621 B2).

As per claim 1, Mathews (or Hakala) teaches a method of managing a cache of a mobile device carried by a user, the cache being used for storing items associated with the locations in real-world space being visited by the user (see Mathews, par. [0003] and [0015], or Hakala, abstract, fig.2, item 260);

(a) receiving an item at the mobile device and initially storing it in an un-degraded form (Mathews, par. [0044] or Hakala, col. 10, line 24, Mathews and Hakala does not teach degrading the cached item inherently teaches initially storing item in an un-degraded form);

Mathews and Hakala fails to teach degrading the item stored in cache. Singh teaches cache system (fig. 1, item 12) with un-degraded and degraded form (col. 3, lines 6-8) and he further teaches upon a predetermined condition degrading the item and storing item in cache (Singh teaches LRU and compression weighted replacement, where victim cache line from uncompressed partition is compressed and stored in compressed partition, col. 3, lines 39-50, col. 4, lines 20-25, Singh further teaches storing prefetched data in uncompressed form (col. 6, lines 60-63)).

It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize compression and decompression of cache lines as taught by Singh in the system of Mathews (Hakala) in order to improve cache's size and performance of the system (see Singh, col. 2, lines 17-19).

As per claim 4, Singh teaches replacing (compressing) a victim cache lines using least recently use (LRU) method (col. 3, lines 42-43, col. 4, lines 20-23). The LRU algorithm tracks the items in the cache and removes (compress as per Singh) the item from cache if the item is not accessed since some time, which inherently teaches degrading item based on time elapsed.

As per claim 5, Singh teaches compressing victim cache line as explained with respect claims 1 and 4 above. The victim cache line is compressed to accommodate a new line fetched from secondary storage, which inherently teaches that there is no space left in the cache and requires data compression.

As per claim 8, Singh teaches cache directory, which keeps track of compressed and uncompressed data and further teaches changing status of the block from uncompressed to compressed form (col. 3, lines 30-39, lines 54-58). Keeping track of status (compressed or uncompressed) of the block inherently teaches a flag (or marker) associated with the cache line.

Claims 11-12, 14-15 and 18 are also rejected under same rationales as applied to claims 1, 4-5 and 8 above. As Mathews teaches means for storing items associated with real world items and receiving means for receiving an item at the mobile device (par. [0017], [0035]).

### ***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathews et al. (US 2003/0060973 A1) (or Hakala et al. (US 6,452,544 B1)) and Singh et al. (US 6,324,621 B2).

As per claims 3 and 13, Halaka (Mathews) and Singh teach limitations of claims 1 and 11 above, but fail to teach degrading the item based on probability usage of item with respect to user's progress around the space. Halaka teaches caching items based on user's progress, current location and predicted path (col. 10, lines 24-44). The predictive caching as taught by Halaka inherently means that the data cached ahead of time before user's need has high probability of being accessed within near future. Also as admitted by applicant, caches are of finite size and during the progress of user in physical space there will be a time when cache will be full and require evicting some data from cache to make a space for new incoming data, so it would have been obvious to one having ordinary skill in the art at the time of the invention to degrade the data from cache (as taught by Singh in the system of Halaka with respect to claim 1 above) with the least usage probability (LRU) of the item as user progress through the physical space of Halaka to make a space for new incoming predictive data.

14. Claims 7 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathews et al. (US 2003/0060973 A1) (or Hakala et al. (US 6,452,544 B1)) and Singh

et al. (US 6,324,621 B2) as applied to claim 1, 11 above and further in view of Chen (US 2003/0115042).

As per claims 7 and 17, the combination of Mathews (Halaka) and Singh fails to teach limitation set forth in claims 7 and 17. Chen teaches a method effecting the degradation of the item comprising a sampled media stream by reducing sample rate (Chen par. [0010], teaches compression reducing the bit-rate).

It would have been obvious to one having ordinary skill in the art at the time of the invention to combine Chen with Mathews (Halaka) and Singh, since this feature of Chen allows for cheaper bit storage and when combined reduces the overall cost of the methods and apparatus of Mathews and Singh (Chen par. 10, lines 1-4).

#### ***Allowable Subject Matter***

15. Claims 9, 16 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaushikkumar Patel whose telephone number is 571-272-5536. The examiner can normally be reached on 8.00 am - 4.30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 571-272-4210. The fax phone

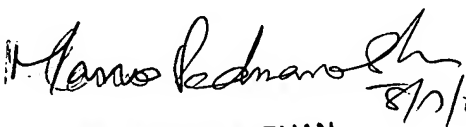
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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
kmp

Kaushikkumar Patel  
Examiner  
Art Unit 2188

  
8/10/06  
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